

MISCELLANEOUS NOTES

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17. OCCURRENCE OF DIFFERENT SPECIES OF COCKROACHES AT LUDHIANA (PUNJAB)

An attempt was made to know the different species of cockroaches occurring in Ludhiana region of the Punjab State. For this purpose different species of cockroaches were collected from the kitchens of residential houses, hostels and hotels; private stores of foodgrains and food commodities at Ludhiana. One species was collected from the kitchen garden. The Zoological Survey of India, Calcutta identified the

different species of cockroaches. The six species are described briefly.

Periplaneta americana (L.): Blattidae (The American cockroach)

This is the largest of all the species noticed in the region. The adults measure 30-40 mm in length. Red to chocolate brown in colour. The adult pronotum has a conspicuous yellow

to buff coloured area surrounding the dark coloured patch in the centre.

Neostylopyga rhombifolia (Stoll) : Blattidae (The harlequin cockroach)

This is a medium sized cockroach. The adults measure 20-25 mm in length. It is shining blackish brown with patches of yellow colour over its body. Yellow-coloured patches are more concentrated on the thorax and sub-marginal area of the abdomen. Wings are vestigial in both the sexes. Males are smaller than females.

Shelfordella tartara (Sauss.) : Blattidae

This is a medium-sized cockroach with males measuring 19-23 mm in length. The wings are fully developed in males and extend beyond the end of the abdomen. The outer margin of the fore wings and the pronotum are translucent. The general body colour is lighter as compared with other species. In females the wings are greatly reduced and the fore wings are triangular. During collections only a few male insects of this species were found in comparison with large number of males and females of other species. This shows that this species is not so abundant in this region.

Blattella germanica (L.) : Blattellidae (The German cockroach)

This is a small-sized cockroach measuring 10-15 mm in length. The males are yellowish-

brown and the females are slightly darker. In adults the wings cover the entire abdomen of females and in males the abdominal tip remains uncovered. The pronotum has two prominent black longitudinal bands separated by a lighter stripe in between.

Supella longipalpa (F.) : Blattellidae (The brownbanded cockroach)

This is a small-sized cockroach measuring 10-14 mm in length. The pronotum is uniformly dark with light coloured lateral areas. The male adults have slender body with wings extending beyond the tip of the abdomen. The adult females have short wings with exposed portion of broad abdomen. The wings of females are comparatively darker than that of males. There are two light-coloured transverse stripes on the fore wings, one near the base and the other over the abdomen.

Polyphaga indica Walk. : Polyphagidae

The males are winged measuring 27-30 mm in length. The females are wingless, nymph-like and measure 27-30 mm. The males look smoky brown due to the presence of light coloured wings while the females are uniformly brownish-black except the anterior margin of the pronotum. The pronotum has a light coloured anterior margin in both the sexes. The antennae are shorter than the body and the cerci are very short.

The above listed species can be separated by the use of the following key :

1. Middle and hind femora without spines but with hairs on latero-ventral margin.....*Polyphaga indica*
-2
2. Middle and hind femora with spines on latero-ventral margin.....2
3. Length more than 18 mm ; female subgenital plate divided longitudinally; male styli uniform, slender, elongate and straight.....3
4. Length less than 18 mm; female subgenital plate entire ; male styli variable, often modified, assymetrical or unequal in size.....5

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3. Wings of both sexes vestigial.....*Neostylopyga rhombifolia*
 Wings of both the sexes well developed or females with pad-like wings.....4
 4. Length 30-40 mm ; wings of both sexes well-developed ; pronotum with dark brown patch surrounded by yellowish area.....*Periplaneta americana*
 Length 19-25 mm ; wings of male well-developed and of females pad-like ; pronotum without dark brown patch surrounded by yellowish area.....*Shelfordella tartara*
 5. Pronotum with two conspicuous longitudinal dark bands.....*Blattella germanica*
 Pronotum without longitudinal dark bands but with broad, dark, central area.....*Supella longipalpa*
- Singh and Sohi (1957) listed *Shelfordella tartara* (Suass.) and *Periplaneta americana* (L.) as pests of household in the Punjab. However, in the present studies *Neostylopyga rhombifolia* (Stoll), *Blattella germanica* (L.) and *Supella longipalpa* (F.) are new records for Punjab as household pests. *Polyphaga indica* Walk. occurring outside the houses is also a new record for this region.

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18. RECORD OF *APANTELES OBLIQUAE* WLKN. AND *METEORUS* SP. (HYMENOPTERA : BRACONIDAE) AS PARASITES OF THE HAIRY CATERPILLAR *AMSACTA MOOREI* BUTL. (LEPIDOPTERA : ARCTIIDAE)

The caterpillars of the moth *Amsacta moorei* Butl. defoliating bean plant, *Phaseolus acontifolius* Jack. in Mehrawal village in Aligarh district were collected during June 1978 and reared in the laboratory. The observations revealed that two braconid species namely, *Apanteles obliquae* Wlkn. and *Meteorus* sp. (probably undescribed) parasitise the caterpillars.

In India the caterpillars of *Amsacta albistriga* and *A. moorei* have been reported to be parasitised by the braconids *Apanteles creatonotus*, *A. bosei* and *A. flavipes* (David and Kumara-swami 1978). Therefore, this appears to be

first record of *A. obliquae* and *Meteorus* sp. on *A. moorei*.

Out of 560 caterpillars collected and observed, 169 were parasitised by these two parasites showing a parasitisation of 30.8 per cent. The parasitisation due to *A. obliquae* was 17.5 per cent and the rest by *Meteorus* sp.

Meteorus sp. is a solitary endoparasite. It forms brownish cocoon outside near the head. The mature cream-coloured grub measures 4.2 to 5.1 mm long and 1.45 to 1.75 mm wide. The cocoon measures 4.2 to 5.3 mm long and 1.65 to 2.15 mm wide.